Question Paper Code:

Tatyasaheb Kore Institute of Engineering & Technology, Warananagar
(An Autonomous Institute)

S. Y. B. Tech (Electronics and Telecommunication) (Semester-IV)

END SEMESTER EXAMINATION, MONTH AUGUST-22

Course Name: Data Structure & algorithms   **Course Code: ETC-405**

Seat No:

Day and Date: Friday,12/08/2022
Time: 10.00 am to 12.00 pm   **Max. Marks- 60**

Instructions:

i. All Questions are compulsory
ii. Figure to the right indicates full marks.
iii. Assume suitable data if missing.
iv. Use of non-programmable calculators is allowed.
v. Answer of MCQ should be written in Answer book

Q. No.		Marks	CO	PO
1	**Attempt all Questions.** **(Fill in the blank with correct answer and write full sentence.**	20	2	3
i	**Array is collection of_____** **a)similar Elements b)Dissimilar elements** **c)Similar & dissimilar elements d)None**	2	2	3
ii	**Record is collection of_____** **a)similar Elements b)Dissimilar elements** **c)Similar & dissimilar elements d)None**	2	2	3
iii	**What are types of data structures ?** **a)Linear b)Non linear** **c)Linear & Non Linear d)None**	2	2	3
iv	**Which of the following is non linear data structure** **a)Array b)Stack** **c)Linked list d)Graphs &Trees**	2	2	3
v	**Stack is related to_____** **a)FIFO b)LIFO** **c)FIFO & LIFO d)None**	2	2	3
Vi	**Which of the following is linear data structures ?** **a)Stack b)Trees** **c)Binary trees d)Graphs**	2	2	3
Vii	**Header node is used as sentinel in** **a)Stack b)Queue** **c)Graphs d)Binary trees**	2	2	3
Viii	**The necessary condition to be checked before deletion from the Queueis** **_____** **a)Overflow b)Under flow** **c)Rear value d)Front value**	2	2	3
ix	**The minimum no of stack required to implement stack is** **a)1 b)3** **c)2 d)5**	2	2	3
x	**How many swaps are required to sort the given array using bubble sort.** **{2,1,3,5,4}** **a)4 b)5** **c)6 d)7**			

2	Attempt any Five from the following	10		
i	What is complexity of an algorithm ?	2	4	3
ii	What is Linear searching?	2	4	3
iii	What is Binary searching?	2	4	3
iv	What is Header Linked list	2	4	3
v	What is Two dimensional Arrays ?	2	4	3
vi	Define Data structure	2	4	3
3	Attempt any Two from the following	10		
a	What is data structure ?Explain data structure operations.	5	3	3
b	What is array ?How to represent array in memory	5	3	3
c	Write an algorithm for traversing Linear array.	5	3	3
4	Attempt any Two from the following	10		
a	What is Linked list ? How to represent linked list in memory ?	5	3	3
b	What is stack ?Explain Push & Pop Operations	5	3	3
c	Write an algorithm for traversing a Linked list	5	3	3
5	Attempt any Two from the following	10		
a	What is trees ? How to represent trees in memory ?	5	3	3
b	What is Graph ?Explain any three terminologies used in graphs.	5	3	3
c	Explain traversing methods used in trees	5	3	3

Tatyasaheb Kore Institute of Engineering & Technology, Warananagar
(An Autonomous Institute)

F. Y. M. Tech (Electronics and Telecommunication Engg.) (Semester-II)

END SEMESTER EXAMINATION, August 2022

Course Name: Computer Vision   Course Code: ETC-PCC-201

Seat No: 01

Day and Date: Wednesday, 03/08/2022
Time: 01:00 pm -03:00 pm   **Max. Marks- 60**

Instructions:
　　　　　i. All Questions are compulsory
　　　　　ii. Figure to the right indicate full marks.
　　　　　iii. Assume suitable data if missing.
　　　　　iv. Use of non-programmable calculators is allowed.

Q. No.		Marks	CO
Q. No. 1	**Solve Any One** a) Explain Image Pyramids and its use. b) Explain Discrete Wavelet Transform in one Dimension. .	**10**	**2,3**
Q. No. 2	**Solve Any One** a) Explain Boundary Following Algorithm. b) How Polygonal Approximation is used to boundary?	**10**	**2**
Q. No. 3	**Solve Any One** a) Explain steps in pattern recognition. b) What are applications of pattern recognition?	**10**	**2,3**
Q. No. 4	**Solve Any One** a) Explain Matching by Correlation b) Explain Nearest Neighbor classifier	**10**	**3**
Q. No. 5	**Solve Any One** a) Explain applications of Image Mining b) Explain with block diagram Simple CBIR System.	**10**	**2,3**
Q. No. 6	**Solve Any One** a) Explain model of Neuron. b) Explain Perception and learning	**10**	**1,3**

Tatyasaheb Kore Institute of Engineering & Technology Warananagar
(An Autonomous Institute)

F. Y. M. Tech (Electronics and Telecommunication Engg.) (Semester-II)

END SEMESTER EXAMINATION, August 2022

Course Name: Computer Vision   Course Code: ETC-PCC-201

| Seat No: 02 |

Day and Date: Wednesday, 03/08/2022

Time: 01:00 pm -03:00 pm   **Max. Marks- 60**

Instructions:
i. All Questions are compulsory
ii. Figure to the right indicate full marks.
iii. Assume suitable data if missing.
iv. Use of non-programmable calculators is allowed.

Q. No.		Marks	CO
Q. No. 1	**Solve Any One** a) Explain Multi resolution Image representation. b) Explain 2D Discrete Wavelet Transform and its applications in Image processing.	10	2,3
Q. No. 2	**Solve Any One** a) Explain Chain Codes with example.. b) Explain following terms: Signatures, Boundary segments, Skeletons.	10	2
Q. No. 3	**Solve Any One** a) Explain steps in pattern recognition. b) What are applications of pattern recognition?	10	2,3
Q. No. 4	**Solve Any One** a) Explain Matching by Correlation b) Explain String matching.	10	3
Q. No. 5	**Solve Any One** a) What are various features used for Image Retrieval? b) Explain with block diagram Simple CBIR System.	10	2,3
Q. No. 6	**Solve Any One** a) What are Different models of Artificial neural networks? b) Explain layered architecture of Artificial neural network.	10	1,3

Tatyasaheb Kore Institute of Engineering and Technology, Warananagar

(An Autonomous Institute, Affiliated to ShivajiUnitversity, Kolhapur)

F.Y.B.Tech.(All Branches) (Sem-II)

End Semester Examination,August-2022

Course Name :   **Basic Electrical and Electronics Engineering**   Course Code:FY105   FY105

Day & Date   :   **Monday, 8-Aug-2022**   Max Marks :   60
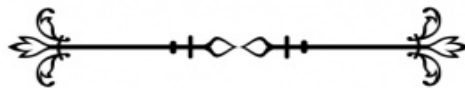
Time   :   **10:00 am to 12:00 noon**

Instructions:
  a) All questions are compulsory
  b) Figuresto the right indicates full marks
  c) Use of non-programmable calculator is allowed
  d) Assume suitable data if required. Bloom's Taxonomy and Course Outcome
      (K1-Remembering, K2-Understanding, K3-Applying, K4-Analyzing,
      K5-Evaluating, K6-Creating)

		Marks	B.L	CO
Q.1	**Attempt the following questions**	30		
i)	**Correct form of ohm's law**	2	K3	1
	A) I = VR B) V ∝ I			
	C) V = IR D) Options B and C			
ii)	**Which property is used to oppose the flow of current?**	2	K2	1
	A) Potential difference B) Capacitance			
	C) Inductance D) Resistance			
iii)	**A terminal where three or more branches meet is known as**	2	K2	1
	A) Terminus B) Combination			
	C) Node D) None of these			
iv)	**A magnetic circuit wound with 1000 turns with MMF 1200 AT then what is current.?**	2	K5	2
	A) 2A B) 1.2A			
	C) 0.5A D) 4A			
v)	**Ohm's law for magnetic circuits is _____**	2	K4	2
	A) MMF=ϕ S B) MMF=ϕ/S			
	C) MMF=ϕ^2S D) MMF=ϕ/S^2			
vi)	**Unit of Reluctance?**	2	K2	2
	A) AT/Wb B) Weber			
	C) Wb/m^2 D) Wb/AT			
vii)	**Diode is acting as a……….**	2	K2	3
	A) Inductance B) Resistance			
	C) Switch D) DC to DC			
viii)	**Transitor has ………..**	2	K1	3
	A) One PN junction B) Two PN junction			
	C) Three PN junction D) Four PN junction			

ix) **The most widely used rectifier is**
A) Half wave rectifier   B) Full wave rectifier   **2   K4   3**
C) Bridge Rectifier   D) None of these

x) **What is tanϕ for RC circuit?**
A) X_C/R B) X_L/R **2   K4   4**
C) R/Z   D) Z/R

xi) **If the power factor is 1/10 and the value of impedance is 20 ohm, calculate the resistance in the circuit**   **K5   4**
A) 1 ohm   B) 2 ohm   **2**

C) 3 ohm   D) 4 ohm

xii) **The peak (maximum) value of sine wave is 100V. Its R.M. S value**
A) 141.42V   B) 70.71V   **2   K5   4**
C) 150 V   D) None of above

xiii) **In a 3 Phase star connected circuit**
A)VL= Vph   B) VL= 3Vph   **2   K4   5**
C) VL= √3 Vph   D)none of these

xiv) **An ideal transformer is one which has**
A) Interleaved primary and secondary windings   B) No losses and magnetic leakage   **2   K2   6**
C) A common core for its primary and secondary windings   D) Core of stainless steel and winding of pure copper metal

xv) **Function of Transformer is**
A) Transfer Electrical Energy from one circuit to other circuit   B) Transfer Electrical Energy from one circuit to other circuit with changing the frequency   **2   K2   6**
C) Transfer Electrical Energy from one circuit to other circuit without changing the frequency   D) None of these

Q.2   Attempt any three   15

a) State the principle of generating three phase voltage, how is 120^0 phase difference obtained in three voltages?   **5   K2   5**

b) Define the following terms

   i).Symmetrical system ii). Phase sequence iii).Three phase balanced load   **5   K2   5**

c) Prove that Line Current = √3 Phase current in a balanced delta Connected circuit   **5   K4   5**

d) Compare star connected 3 phase load with delta connected 3 phase load in terms of phase voltage, phase current, power drawn, other advantages related to the configuration   **K1   5**

Q.3   Attempt any three   15

a) State & explain the power losses occurred in a transformer   **5   K2   6**

b) Explain Ideal transformer with neat sketch & draw its phasor diagram for primary induced emf opposes the supply voltage   **5   K2   6**

c) A single-phase transformer has 400 primary and 1000 Secondary turns. The net cross sectional area of the core is 60cm^2. The supply is 500V, 50Hz. Find (i) The secondary induced voltage (ii) The maximum value of flux (iii) The maximum value of flux density in the core   5   K5   6

d) A single phase transformer is to step down the voltage from 2200V to 250V. If the area of the core is 36cm^2 and the maximum value of flux density is 1.2 Wb/m^2 Find   5   K5   6

   i). The primary & secondary number of turns

   ii). The turns Ratio

   iii). The primary & secondary currents, if transformer power rating is 5KVA

Tatyasaheb Kore Institute of Engineering and Technology, Warananagar
(An Autonomous Institute, Affiliated to ShivajiUnitversity, Kolhapur)

F.Y.B.Tech.(All Branches) (Sem-II)
End Semester Examination,August-2022

Course Name : **Basic Electrical and Electronics Engineering** Course Code: FY105
Day & Date : **Monday, 8-Aug-2022** Max Marks : 60
Time : **10:00 am to 12:00 noon**

Instructions:
    a) All questions are compulsory
    b) Figuresto the right indicates full marks
    c) Use of non-programmable calculator is allowed
    d) Assume suitable data if required. Bloom's Taxonomy and Course Outcome
    (K1-Remembering, K2-Understanding, K3-Applying, K4-Analyzing,
    K5-Evaluating, K6-Creating)

		Marks	B.L	CO
Q.1	**Attempt the following questions**	30		
i)	**Kirchhoff's current law states that**			
	A) Net current flow at the junction is positive B) Algebraic sum of the currents meeting at the junction is zero C) No current can leave the junction without some current entering it D) None of these	2	K2	1
ii)	**Which of the following is not correct?**			
	A) $P = V/R^2$ B) $P = VI$ C) $I=\sqrt{(P/R)}$ D) $V=\sqrt{(PR)}$	2	K3	1
iii)	**Specific resistance (Resistivity constant) unit..?**			
	A) Ohm B) Ohm/Meter C) Mho D) Ohm-Meter	2	K2	1
iv)	**Magnetic flux density unit?**			
	A) weber/meter B) weber/ meter^2 C) Tesla D) Both B&C	2	K2	2
v)	**Relative permeability(µr) of air gap is**			
	A) 0.5 B) 0.25 C) 1 D) 2	2	K1	2
vi)	**What happens to the MMF when the magnetic flux decreases?**			
	A) Increases B) Decreases C) Remains constant D) Becomes zero	2	K2	2
vii)	**A Transistor is a ------------operative device**			
	A) Current B) Voltage C) Power D) Resistance	2	K3	3
viii)	**A reverse biased PN junction is acting as an..?**			
	A) Amplifier B) Open switch C) Closed switch D) Rectifier	2	K3	3

ix) **The most widely used rectifier is**
A) Half wave rectifier   B) Full wave rectifier   **2   K4   3**
C) Bridge Rectifier   D) None of these

x) **The peak (maximum) value of sine wave is 100V. Its R.M. S value**
A) 141.42V   B) 70.71V   **2   K5   4**
C) 150 V   D) None of above

xi) **A series circuit is connected across voltage of 70V, current of 1.7 A, if power factor of circuit is 0.3 , calculate Active power**   **2   K5   4**
A) 38.7 Watt   B) 30.24 watt
C) 35.7 Watt   D) 44.24 watt

xii) **RMS value of Current for an AC circuit**
A) $I_{RMS} = I_{avg} / \sqrt{2}$ B) $I_{RMS} = I / \sqrt{2}$ **2   K4   4**
C) $I_{RMS} = I_m / \sqrt{2}$ D) $I_{RMS} = I_{sin\acute{o}} / \sqrt{2}$

xiii) **Power in a Three Phase AC Circuit is**
A) $P = \sqrt{3}\, V_L\, I_L\, Cos\Phi$ B) $P = \sqrt{3}\, V_L\, I_L\, Sin\,\Phi$ **2   K4   5**
C) $P = 3V_L\, I_L\, Cos\Phi$ D) None of these

xiv) **Maximum value of flux established in a transformer on load is equal to**   **2   K4   6**
A) E1/ (4.44*f*N1)   B) E2/ (4.44*f*N1)
C) E1/ (4.44*f*N2)   D) none of these

xv) **Which type of flux does transformer action need?**
A) Constant magnetic flux   B) Increasing magnetic flux   **2   K2   6**
C) Alternating magnetic flux   D) Alternating electric flux

Q.2   Attempt any three   **15**

a) List the advantages of 3 phase power generation, transmission, distribution & 3 phase machines   **5   K2   5**

b) State the principle of generating three phase voltage, how is 120^0 phase difference obtained in three voltages?   **5   K2   5**

c) Prove that Line Voltage = $\sqrt{3}$ Phase Voltage in a balanced star Connected circuit.   **5   K4   5**

d) Compare star connected 3 phase load with delta connected 3 phase load in terms of phase voltage, phase current, power drawn, other advantages related to the configuration   **5   K1   5**

Q.3   Attempt any three   **15**

a) Explain construction & working principle of single phase transformer   **5   K2   6**

b) Obtain the mathematical derivation for EMF equation of a transformer& write Voltage and Turns ratio.   **5   K4   6**

c) A single phase transformer has 500 primary and 1000 secondary turns. The net cross sectional area of the core is 50 cm^2 . If the primary winding is connected to a 50 Hz supply at 400 V,   **5   K5   6**
Find (i) The secondary induced voltage (ii) The maximum value of flux (iii) The maximum value of flux density in the core.

d) A single phase transformer is to step down the voltage from 2200V to 250V. If the area of the core is 36cm² and the maximum value of flux density is 1.2 Wb/m². Find   **5**   **K5**   **6**
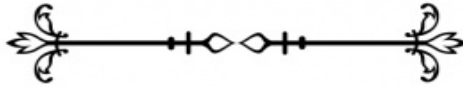
i). The primary & secondary number of turns

ii). The turns Ratio

iii). The primary & secondary currents if transformer power rating is 5KVA

Tatyasaheb Kore Institute of Engineering & Technology Warananagar
(An Autonomous Institute)
S. Y. B. Tech (Electronics & Telecommunication Engineering) (Semester-IV)

END SEMESTER EXAMINATION, MONTH AUGUST 2021-22
Course Name: Linear Integrated Circuits   Course Code: ETC403 (SET-II)

Seat No:

Day and Date: Friday,(08/08/2022)
Time: 2.00 Hrs   **Max. Marks- 60**

Instructions:

i. **All Questions are compulsory**
ii. Figure to the right indicates full marks.
iii. Assume suitable data if missing.
iv. Use of non-programmable calculators is allowed.

Q. No.		Marks	CO	PO
1	**Attempt following all questions**	**20**		
i.	What will be the emitter current in a differential amplifier, where both the transistor are biased and matched? (Assume current to be I_Q) a) $I_E = I_Q/2$ b) $I_E = I_Q$ c) $I_E = (I_Q)^2/2$ d) $I_E = (I_Q)^2$		CO1	PO1
ii.	How to improve CMRR value a) Increase common mode gain b) Decrease common mode gain c) Increase Differential mode gain d) Decrease differential mode gain		CO1	PO1
iii.	An ideal op-amp requires infinite bandwidth because a) Signals can be amplified without attenuation b) Output common-mode noise voltage is zero c) Output voltage occurs simultaneously with input voltage changes d) Output can drive infinite number of device		CO2	PO1
iv.	Ideal slew rate of op amp implies a) change in output after some time if input is changed b) change in input after some time if output is changed c) Simultaneous change in input and output d) None of above		CO2	PO2
v.	In inverting voltage comparator if Vin > Vref then output is a) Maximum b) Minimum c) +Vsat d) -Vsat		CO1	PO1
vi.	What is need of precision rectifier a) to rectify very small amplitude signal b) to rectify high amplitude signal c) to improve rectification efficiency d) all above		CO2	PO1
vii.	Circuit used to find maximum level of input signal is a)Window detector b) Peak detector c) Integrator d) rectifier		CO2	PO1
viii.	In an instrumentation amplifier, the output voltage is based on the _ a) summation of the two inputs b) product of the two inputs c) difference between the two inputs c) None of the above		CO2	PO2
ix.	The equation for the time period of square wave generator a) $T= 2RC \ln\times[(R_1+ R_2) / (R_2)]$. b) $T= 2RC \ln\times[(2R_1+ R_2) / (R_2)]$. c) $T= 2RC \ln\times[(R_1+ 2R_2) / (R_2)]$. d) $T= 2RC \ln\times[(R_1+ R_2) / (2 R_2)]$.		CO2	PO1

x.	Active filter consists of a)Active components b) passive components c) Active and Passive components d) None of the above			**CO1**	**PO1**
2	**Attempt any Five from the following**	**10**			
i.	Define CMRR. Mention various methods to improve CMRR.			**CO1**	**PO1**
ii.	What are advantages of negative feedback in op-amp application?			**CO1**	**PO1**
iii.	Draw op-amp high frequency equivalent circuit.			**CO4**	**PO2**
iv.	Give the classification of comparators.			**CO2**	**PO1**
v.	What are the equations for frequency of oscillation for RC phase shift and Wein bridge oscillator.			**CO2**	**PO1**
vi.	What is equation for frequency of oscillation for Astable multi vibrator using IC 555			**CO2**	**PO2**
3	**Attempt any Two from the following**	**10**			
a	With neat sketch explain current mirror circuit.			**CO1**	**PO1**
b	Derive equation for voltage gain for voltage shunt feedback amplifier.			**CO2**	**PO2**

c	Following specification are given for DIBO :
	Rc = 2.2 KΩ , RE = 4.7 KΩ , Rin1 = Rin2 = 50 Ω , Vcc=10 V , -VEE= -10 V , βdc = βac = 100 with Vbe= 0.715 V
	Determine : i) Operating voltage and current
	            ii) Voltage gain
	            iii) Input and output resistance
				CO3	**PO2**

d	With neat sketch explain working of differential amplifier using one op-amp. Also explain the subtractor.			**CO3**	**PO1**
4	**Attempt any Two from the following**	**10**			
a	With neat sketch explain grounded load V to I converter			**CO1**	**PO1**
b	With neat sketch explain the working of precision full wave rectifier.			**CO2**	**PO2**
c	Derive the equation for slew rate.			**CO3**	**PO1**
d	With neat schematic diagram explain the working of triangular wave generator.			**CO2**	**PO1**
5	**Attempt any Two from the following**	**10**			
a	Draw and explain astable multi vibrator using IC 555. Draw necessary waveforms.			**CO2**	**PO2**
b	Design first order Butterworth high pass filter with pass band gain of 3 and cutoff frequency of 5 KHz.			**CO1**	**PO1**
c	With neat sketch explain sample and hold circuit. Draw necessary waveforms.			**CO2**	**PO2**
d	Draw first order Butterworth LPF. Derive equation for its cutoff frequency.			**CO1**	**PO1**

Tatyasaheb Kore Institute of Engineering & Technology,Warananagar
(An Autonomous Institute)
F. Y. M. Tech (ETC) (Semester-II)
END SEMESTER EXAMINATION, August 2022

Course Name: Advanced Microwave Circuit Design   **Course Code: ETC-PE_20411**

Day and Date: Wednesday, 10/08/2022

Seat No:

Time: 2.00 Hrs 1.0 to 3.00   **Max. Marks- 60**

Instructions:

i. All Questions are compulsory
ii. Figure to the right indicates full marks.
iii. Assume suitable data if missing.
iv. Use of non-programmable calculators is allowed.

Q. No.1	Attempt any one from the following	Marks	CO
a)	List out the advantages of micro-strip line over rectangular wave guide	**10**	**2**
b)	Explain how the calculation of load reflection coefficient is done using Schmitt Chart		
Q. No.2	Attempt any one from the following		
a)	Explain step by step procedure of Smith chart in computing impedance of Passive circuit	**10**	**1**
b)	Explain the characteristics of Schmitt Chart		
Q. No.3	Attempt any one from the following		
a)	What is RF filter? Describe basic steps in microwave RF filter design	**10**	**2**
b)	What are the parameters used to evaluate the performance of an amplifier?		
Q. No.4	Attempt any one from the following		
a)	Explain procedure for design of microwave Low Noise Amplifier	**10**	**4**
b)	With design circuit for BJT explain working of biasing circuit for RF Amplifier		
Q. No.5	Attempt any one from the following		
a)	Compare HMICs with MMICs	**10**	**5**
b)	Discuss the discrete integrated and monolithic microwave integrated circuit		
Q. No.6	Attempt any one from the following		
a)	Explain basic oscillator model	**10**	**4**
b)	Explain manufacturing process on MMIC resistor and capacitor		

Tatyasaheb Kore Institute of Engineering & Technology Warananagar
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S. Y. B. Tech (Electronics and Telecommunication) (Semester-IV)

END SEMESTER EXAMINATION, AUGUST-2022

Course Name: Electronics Devices & Circuits-II   Course Code: ETC-401

Seat No:

Day and Date: Wednesday, 3rd August, 2022.

Time:10.00 to 12.00- 2.00 Hrs   **Max. Marks- 60**

Instructions:
i. All Questions are compulsory
ii. Figure to the right indicates full marks.
iii. Assume suitable data if missing.
iv. Use of non-programmable calculators is allowed.
v. Answer of MCQ should be written in Answer book

Q. No.		Marks	CO	PO
1	**Attempt all Questions.** **(Fill in the blank with correct answer and write full sentence.**	20	2	3
i	RC coupling is used for ………………. amplification 1. Voltage 2. Current 3. Power 4. None of the above	2	2	3
ii	When a multistage amplifier is to amplify d. c. signal, then one must use ……..coupling 1. RC 2. Transformer 3. Direct 4. None of the above	2	2	3
iii	When negative voltage feedback is applied to an amplifier, its voltage gain ………………. 1. Is increased 2. Is reduced 3. Remains the same 4. None of the above	2	2	3
iv	The value of negative feedback fraction is always ……………. 1. Less than 1 2. More than 1 3. Equal to 1 4. None of the above	2	2	3
v	Class B power amplifier, the output current flows for 1.less than half of input cycle 2.more than half input cycle 3.half input cycle 4.entire input cycle	2	2	3
vi	Power amplifier directly amplifies _____ 1 Voltage of signal 2 Current of the signal 3 Power of the signal 4 All of the mentioned	2	2	3

vii	An oscillator converts …………….. 1.ac. power into d.c. power 2.dc. power into a.c. power 3.mechanical power into a.c. power 4.none of the above	2	2	3
viii	Astable M.V is _____ in both of the states. 1.stable 2.unstable 3.free running 4.all are correct	2	2	3
ix	IC 78XX provides……… 1.positive voltage 2.negative voltage 3.both 4.none of the above	2	2	3
x	Multivibrators are _____ stage feedback amplifier. 1.two 2.single 3.quad 4.a & b are correct	2	2	3
2	**Attempt any Five from the following**	**10**		
i	What is the need of multistage amplifier?	2	4	3
ii	Define negative Feedback.	2	4	3
iii	Compare voltage amplifier and power amplifier. (Any two points)	2	4	3
iv	State the types of Oscillations.	2	4	3
v	What is the alternate name of Astable and Monostable Multivibrator.	2	4	3
vi	Draw pin diagram of 78XX and 79XX.	2	4	3
3	**Attempt any Two from the following**	**10**		
a	State the effect of negative feedback on different parameters of amplifier.	5	3	3
b	Explain in detail frequency response of RC coupled amplifier.	5	3	3
c	An amplifier has gain of 300. When negative feedback is applied, the gain is reduced to 240. Find the value of feedback factor.	5	3	3
4	**Attempt any Two from the following**	**10**		
a	Derive an expression for the second order harmonic distortion using three point methods.	5	3	3
b	Write a short note on: Crystal Oscillator	5	3	3
c	What is cross over distortion? State its cause.	5	3	3
5	**Attempt any Two from the following**	**10**		
a	Derive expression for frequency of Oscillation for Astable Multivibrator.	5	3	3
b	Draw and explain with waveforms Monostable Multivibrators.	5	3	3
c	State important features of 78XX regulator.	5	3	3